

Amendments to the Specification:

Please replace paragraphs **[0038]** and **[0039]** with the following amended paragraph:

[0038] As illustrated in Figures 5-7 the window material and the dead layer of the silicon solid-state charge particle detector **10''** could be formed or constructed as a single component or an assembled modular device constituting the same element. In this instance, the microfluidic plate is preferably fabricated entirely out of silicon, and a combination dead layer/channel surface **20'** is preferably fabricated by vapor deposition or other similar technique. Although the conversion of the liquid surface to conductor renders it to be of minimal utility for electro-osmotic flow (EOF), hydrodynamic flow is useful and EOF pumps could be used upstream or downstream of the flow.

[0039] Referring to Figs. 6 and 7, an alternate embodiment of a detector assembly **10'''** is illustrated. In this embodiment, the detector is preferably constructed of any suitable semiconducting material and while silicon is preferred the invention is not so limited. Accordingly, base **15'** is constructed of silicon and a microfluidic channel **20''** is fabricated in the silicon. An optional dead layer on the fluidic surface of the microfluidic channel **20''** may be provided depending upon the configuration and desired or intended usage. The electrodes **50** could be deposited on the outside of the device, but it is also conceivable to position them internally within the confines of the base **15'** to minimize inadvertent and potentially deleterious contact with other components or foreign articles.